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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,042	01/09/2004	Mou-Shiung Lin	085027-0104	8665

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McDermott Will & Emery LLP
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EXAMINER

JACKSON JR, JEROME

ART UNIT	PAPER NUMBER
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2815

NOTIFICATION DATE	DELIVERY MODE
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08/12/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

SIP_Docket@mwe.com

Office Action Summary	Application No. 10/755,042	Applicant(s) LIN ET AL.	
	Examiner Jerome Jackson Jr.	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 163-171, 173 and 176-210 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 163-171, 173 and 176-210 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/24/10 has been entered.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 165, 190 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis for "passive device" in claim 165. In claim 190 "comprises further comprising" is indefinite.

Claims 163-165, 168, 171, 173, 176 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger 6,396,148 in view of Gupta 6,383,858.

Eichelberger as previously, disclosing a first insulating layer 104 coplanar with dies 102; a second insulating layer 106 over both the first insulating layer and dies; a patterned metal layer 108; and a third insulating layer 112. The difference between Eichelberger and claim 163 is a comb shaped capacitor. This difference is not patentable because Gupta suggests a comb shaped capacitor in upper level

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metallization to enable circuitry with substantial capacitance. It would have been obvious to have engineered an interdigitated or "comb-shaped" capacitor structure in an Eichelberger type device to enable circuitry requiring large capacitance in a small area. Claims 163-165 are obvious structure. Claim 168 is rejected as copper metal is disclosed by Eichelberger and obvious for metallization regardless of the method of making the copper. Note the previously recited product by process caselaw.

Claim 171 is rejected as Eichelberger discloses multiple solder bumps 110.

Claim 173 is rejected because Eichelberger discloses gold bumps (col. 8 and 9).

Claim 176 is rejected because Eichelberger discloses a substrate 101.

Claims 166-170 and 178 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger with Gupta and further in view of Cole 5,745,984.

As previously Cole discloses BCB and polyimide to form multilevel insulating films. For the advantages discussed in Cole it would have been prima facie obvious to practice similar materials in a device as Eichelberger with Cole. Claims 166, 167, 169 and 170 are obvious structure. In regard to claim 168, Cole also discloses electroplated copper for conductors. In regard to claim 178 Cole discloses epoxy material.

Claims 177 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger with Gupta and further in view of Wagner 5,196,377.

In regard to a silicon substrate, Wagner suggests a silicon substrate for the advantages of material matching to silicon dies as disclosed in Eichelberger, and further

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for increasing the density of metal interconnections, and for increasing the yield of good devices. Claim 177 is obvious structure.

Claims 179, 184, 187-194 and 196-199, 201, 203, 205, 206 and 208-210 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger with Gupta and further in view of Wachtler 6,707,124.

In regard to connecting two pads on a single die, Wachtler in figure 22 discloses such configuration, which would have been obvious for Eichelberger in order to connect transistors or other devices on a single chip with adjacent metallization. Claim 179 is obvious structure.

In regard to claim 184 Gupta discloses multiple insulation layers.

In regard to claims 187-189, labels as “ground”, “power”, “signal”, etc. do not distinguish over the metalizations of the applied art labeled in a similar manner. Further such busses are fundamental in the art and would have been obvious for the applied references.

In regard to claim 190 and 192 “a capacitor” can form a filter circuit or be labeled a “filter”.

In regard to claim 191 the wiring structure of the capacitor or other wirings of the applied art comprises inductance and can be labeled “inductor”. There are no specific inductance structures claimed to distinguish over the applied art.

Likewise, in regard to claim 193, all wires have resistance and the wires of the applied art can be labeled “resistor” as no distinguishing resistor structure is claimed.

In regard to claim 194 there is a “substrate” 101 in Eichelberger.

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In regard to claim 196, Gupta discloses the capacitor directly over the semiconductor substrate and insulation layers.

Claim 197 is rejected as per claim 179, the label "ground piece" not distinguishing over the metallization of Wachtler similarly labeled. Claims 198 and 199, 201, 203, 205, 206, and 208-210 are also rejected as above.

Claims 180-183, 185, 186, 200, 202 and 204 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger with Gupta and Wachtler and further in view of Cole.

As above, Cole suggests epoxy/polyimide for insulation layers. Claims 180-183, 185, 186, 200, 202, 204, are obvious structure.

Claims 195, 207 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eichelberger with Gupta and Wachtler and further in view of Wagner.

As above, Wagner suggests silicon substrate for increased density of interconnections and better thermal dissipation of unwanted heat, etc. Claims 195 and 207 is obvious structure.

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730. The examiner can normally be reached on M-Th.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerome Jackson Jr./
Primary Examiner, Art Unit 2815